SPECIAL ISSUE

CONTENTS

Introduction
R.C. Melcangi, G.C. Panzica (Italy) 1

Biosynthesis and action of neurosteroids
S.H. Mellon, L.D. Griffin, N.A. Compagnone (USA) 3

Anatomical and biochemical evidence for the synthesis of unconjugated and sulfated neurosteroids in amphibians
A.G. Mensah-Nyagan, D. Beaujean, V. Luu-The, G. Pelletier, H. Vaudry (France, Canada) 13

Brain androgen and progesterone metabolizing enzymes: biosynthesis, distribution and function
E.D. Lephart, T.D. Lund, T.L. Horvath (USA) 25

The control of preoptic aromatase activity by afferent inputs in Japanese quail
P. Absil, M. Baillien, G.F. Ball, G.C. Panzica, J. Balthazart (Belgium, USA, Italy) 38

Neuroactive steroids: molecular mechanisms of action and implications for neuropsychopharmacology
R. Rupprecht, F. di Michele, B. Hermann, A. Ströhle, M. Lancel, E. Romeo, F. Holsboer (Germany, Italy) 59

Modulation of native and recombinant $GABA_A$ receptors by endogenous and synthetic neuroactive steroids
J.J. Lambert, D. Belelli, S.C. Harney, J.A. Peters, B.G. Frenguelli (UK) 68

Role of allopregnanolone in regulation of $GABA_A$ receptor plasticity during long-term exposure to and withdrawal from progesterone
P. Follesa, A. Concas, P. Porcu, E. Sanna, M. Serra, M.C. Mostallino, R.H. Purdy, G. Biggio (Italy, USA) 81

Recent developments in structure–activity relationships for steroid modulators of $GABA_A$ receptors
D.F. Covey, A.S. Evers, S. Mennerick, C.F. Zorumski, R.H. Purdy (USA) 91

The role of GABAergic neuroactive steroids in ethanol action, tolerance and dependence
A.L. Morrow, M.J. VanDoren, S.N. Penland, D.B. Matthews (USA) 98

The socially-isolated mouse: a model to study the putative role of allopregnanolone and 5α-dihydroprogesterone in psychiatric disorders
A. Guidotti, E. Dong, K. Matsumoto, G. Pinna, A.M. Rasmusson, E. Costa (USA, Japan) 110

The interaction between neuroactive steroids and the σ_1 receptor function: behavioral consequences and therapeutic opportunities
T. Maurice, A. Urani, V.-L. Phan, P. Romieu (France) 116

Neurosteroids: recent findings
E. Plassart-Schiess, E.-E. Baulieu (France) 133

Estradiol, in the CNS, targets several physiologically relevant membrane-associated proteins
V.D. Ramirez, J.L. Kipp, I. Joe (USA) 141

Ovarian steroids and selective estrogen receptor modulators activity on rat brain NMDA and AMPA receptors
M. Cyr, O. Ghribi, C. Thibault, M. Morissette, M. Landry, T. Di Paolo (Canada) 153

The testosterone metabolite and neurosteroid 3α-androstanediol may mediate the effects of testosterone on conditioned place preference
R.A. Rosellini, B.B. Svare, M.E. Rhodes, C.A. Frye (USA) 162

Progesterone receptor: some viewpoints on hypothalamic seasonal fluctuations in a lower vertebrate
G. Guerriero, G. Ciarcia (Italy) 172

Steroid-induced plasticity in the sexually dimorphic vasotocinergic innervation of the avian brain: behavioral implications
G.C. Panzica, N. Aste, C. Castagna, C. Viglietti-Panzica, J. Balthazart (Italy, Japan, Belgium) 178

The role of neurosteroids and non-genomic effects of progestins and androgens in mediating sexual receptivity of rodents
C.A. Frye (USA) 201

Interactions between growth factors and steroids in the control of LHRH-secreting neurons
R.C. Melcangi, I. Cavarretta, V. Magnaghi, L. Martini, M. Galbiati (Italy) 223

Gonadotropin-releasing hormone neurons, NMDA receptors, and their regulation by steroid hormones across the reproductive life cycle
A.C. Gore (USA) 235

Modulation of fibroblast growth factor-2 by stress and corticosteroids: from developmental events to adult brain plasticity
R. Molteni, F. Fumagalli, V. Magnaghi, M. Roceri, M. Gennarelli, G. Racagni, R.C. Melcangi, M.A. Riva (Italy) 249

Stress, the immune system and vulnerability to degenerative disorders of the central nervous system in transgenic mice expressing glucocorticoid receptor antisense RNA
B. Marchetti, M.C. Morale, N. Testa, C. Tirolo, S. Caniglia, S. Amor, C.D. Dijkstra, N. Barden (Italy, The Netherlands, UK, Canada) 259

Do glucocorticoids contribute to brain aging?
N.R. Nichols, M. Zieba, N. Bye (Australia) 273

Dehydroepiandrosterone and the relationship with aging and memory: a possible link with protein kinase C functional machinery
M. Racchi, S. Govoni, S.B. Solerte, C.L. Galli, E. Corsini (Italy) 287

Age-related changes of the adrenal secretory pattern: possible role in pathological brain aging
E. Ferrari, D. Casarotti, B. Muzzoni, N. Albertelli, L. Cravello, M. Fioravanti, S.B. Solerte, F. Magri (Italy) 294

Role of pregnenolone, dehydroepiandrosterone and their sulfate esters on learning and memory in cognitive aging
M. Vallée, W. Mayo, M. Le Moal (France) 301

Estradiol is a protective factor in the adult and aging brain: understanding of mechanisms derived from in vivo and in vitro studies
P.M. Wise, D.B. Dubal, M.E. Wilson, S.W. Rau, M. Böttner, K.L. Rosewell (USA) 313

PII: S0165-0173(01)00146-1

Interactions of estrogens and insulin-like growth factor-I in the brain: implications for neuroprotection
G.P. Cardona-Gómez, P. Mendez, L.L. DonCarlos, I. Azcoitia, L.M. Garcia-Segura (Spain, USA) 320
Estrogen neuroprotection: the involvement of the Bcl-2 binding protein BNIP2
S. Belcredito, E. Vegeto, A. Brusadelli, S. Ghisletti, P. Mussi, P. Ciana, A. Maggi (Italy) 335
Progesterone synthesis and myelin formation in peripheral nerves
M. Schumacher, R. Guennoun, G. Mercier, F. Désarnaud, P. Lacor, J. Bénavides, B. Ferzaz, F. Robert, E.E. Baulieu (France) 343
Neuroactive steroids and peripheral myelin proteins
V. Magnaghi, I. Cavarretta, M. Galbiati, L. Martini, R.C. Melcangi (Italy) 360
Neuroprotective effects of gonadal steroids on regenerating peripheral motoneurons
K.J. Jones, T.J. Brown, M. Damaser (USA) 372

Author Index 383